

**GUIDED SELF-ASSEMBLY OF BLOCK COPOLYMER FILMS ON  
INTERFEROMETRICALLY NANOPATTERNED SUBSTRATES**

**ABSTRACT**

Copolymer structures are formed by exposing a substrate  
5 with an imaging layer thereon to two or more beams of selected  
wavelengths to form interference patterns at the imaging layer to change  
the wettability of the imaging layer in accordance with the interference  
patterns. A layer of a selected block copolymer is deposited onto the  
exposed imaging layer and annealed to separate the components of the  
10 copolymer in accordance with the pattern of wettability and to replicate  
the pattern of the imaging layer in the copolymer layer. Stripes or  
isolated regions of the separated components may be formed with  
periodic dimensions in the range of 100 nm or less.